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ABSTRACT

Noting that most classroom teachers use informal reading inventories (IRI) as diagnostic instruments, a study examined what oral reading accuracy level is most appropriate for the instructional level and whether repetitions should be counted as oral reading errors. Randomly selected students from the second through fifth grades at two elementary schools in Central Florida were tested and 136 test protocols were analyzed. The findings indicated that criteria of 90% word recognition accuracy with 70% comprehension for passage level one and 94% word recognition accuracy (70% comprehension) for levels two through four should be used with the Joels, Anderson, and Thompson (1983) IRI. The limited data available did not seem to support the inclusion of repetition among scorable errors nor is repetition an important criterion of oral reading accuracy for determining the instructional level on an IRI. (Tables indicating word recognition accuracy at each level of an IRI and percentage of oral reading accuracy with and without repetitions are included.) (SRT)

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A Report on IRI Scoring and Interpretation

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A Report on IRI Scoring and Interpretation

Informal reading inventories (IRIs) have been popular for many years. According to Masztal and Smith (1984), a majority of classroom teachers responding to a survey do use these diagnostic instruments. However, they have come under increasing criticism by reading professionals. In a review of the history and validity of the IRI, Spache (1976) concluded that these tests lack validity and require higher interpretation levels than research supports. During an evaluation of eleven currently used informal inventories, Jongsma and Jongsma (1981) found that none was validated on actual classroom reading performance. In this study, two aspects of IRI procedures and scoring are described. Research findings related to word recognition accuracy criterion and repetitions are presented.

Word Recognition Accuracy

In Betts' (1946) original description of an informal reading inventory, a word recognition accuracy level of 95% was suggested. This level was based on Killgallon's research (1942) which has several weaknesses for validation purposes. Among those weaknesses are a narrow oral reading accuracy range, a small sample from only one grade level, and a different administration procedure than is commonly used with IRIs.

Few studies since 1942 have attempted to establish and empirically validate the IRI's instructional level. Cooper (1952) compared the reading achievement of two student groups over a one year period. Students in one group used materials at their respective instructional

levels, while the other group used materials at other levels. As a result of his findings, Cooper recommended a word recognition accuracy level of 98% for the primary grades and 96% for the intermediate grades.

In another study, Powell (1970) also concluded that the number of allowable oral reading errors varied at different reading levels. Powell's recommendations were for 85% oral reading accuracy at grades one and two and 91 to 94% for grades three through six.

Are Repetitions Errors?

Another area of concern regarding IRIs is the diversity of test administration and scoring techniques used in various published instruments. Spache (1976) noted that informal inventories now use different administration techniques than Betts (1946) recommended. In a review of the literature Powell and Dunkeld (1971) reported eleven different scoring standards in use while a decade later Jongsma and Jongsma (1981) also noted wide variations in directions for test administration and scoring.

One major scoring criterion found to lack consistent recommendations was the inclusion of repetitions when computing word recognition accuracy. Killgallon did count repetitions as errors in his original research. However, the International Reading Association later did not recommend their inclusion in the error count (Johnson and Kress, 1965). More recently Jongsma and Jongsma (1981) reported that eight published inventories did include repetitions while three did not.

Only two studies are reported in the literature regarding repetitions on IRIs and these provide conflicting results. When compared with reading comprehension scores, Dunkeld (1971) reported the most accurate oral scoring was without repetitions counted as errors.

Ekwall (1974) compared oral scoring procedures at the frustration level and concluded that repetitions should be included.

Purposes, Procedures, and Results

An IRI which was developed by the researchers and others was used for the study (Joels, Anderson and Thompson, 1983). Two research questions were investigated: What oral reading accuracy level is most appropriate for the instructional level and should repetitions be counted as oral reading errors?

Students from the second through fifth grades at two elementary schools in Central Florida were randomly selected. Testing took place between September and November, 1983 by the researchers and a trained graduate student. A total of 136 test protocols were available for analysis.

To determine the appropriate oral reading accuracy level, a design adapted from Powell's (1970) research was used. Students' highest passage levels with minimum 70% comprehension were used in subsequent computations. The number of word recognition errors tolerated for each student at this level was determined and means for the passage levels were computed.

Table 1 presents the distribution of obtained means of word recognition accuracy levels for the reading passage levels. The numbers of students achieving acceptable comprehension at the higher passage levels (five through eight) were not large enough to yield useful results. The mean of word recognition accuracy for levels one through four was 92.5%, the mean calculated across all levels was

93.3%, and the mean for level one was 90%. If the lower level for grade one is taken as a separate criterion appropriate for just that level, the mean for grades two through four increases to 93.5%.

To investigate scoring of repetitions, two different word recognition accuracy scoring procedures were compared. These procedures differed only in the way that repetitions were treated. Using the highest passage level where comprehension was 70% or higher, the mean oral reading accuracy percentages for students in each grade level were computed for both procedures. As shown in Table 2, the mean word recognition accuracy percentages with repetitions counted ranged from 89 to 94. When repetitions were not counted the percentages ranged from 93 to 96. The t values for students at each grade level were not statistically significant at the .05 alpha level, nor was the difference significant for the total group of 136. These findings do not support one scoring method over the other.

Discussion and Conclusions

The criteria in use for the oral reading accuracy level on an informal reading inventory is based on limited and conflicting data. However, recent data seem in agreement on two points. Powell (1970) suggested 85% oral reading accuracy for grades one and two while this study reported 90% for grade one. Both studies indicate that more word recognition errors can be tolerated at the lower grade levels, as long as acceptable comprehension is maintained. For grades two through four, the 93-94% criterion obtained in this study fell within the range Powell identified as appropriate for the intermediate grades (91-94%).

Based on the findings of this study, it is recommended that criteria of 90% word recognition accuracy with 70% comprehension for

passage level one and 94% word recognition accuracy (70% comprehension) for levels two through four be used with the JAT Reading Inventory. Further research is needed, however, to establish criteria for the higher passage levels on this instrument. When other commercially available IRIs or teacher-made inventories are administered, teachers may prefer to use Powell's criteria of 85% word recognition accuracy for grades one and two and 91-94% word recognition accuracy for grades three to six, with 70% comprehension required at all passage levels.

Regarding repetitions, even though the current published inventories include repetitions among scorable errors more often than not, the limited data available do not seem to support that procedure; rather it appears that conclusive evidence regarding repetitions is not available at this time. Lacking consistent research data, many reading professionals have pragmatically suggested that students not be penalized for repetitions when reading an IRI. Among those recommending that repetitions not be included as oral reading errors are Dunkeld (1971), Powell (1978), Goodman (1965), Hanes (1984), and the International Reading Association (Johnson and Kress, 1965). While Ekwall's (1974) research led to the opposite recommendation, it was based on findings obtained with the unreliable polygraph instrument.

Data from this research also seem to indicate that repetitions are not an important criterion of oral reading accuracy for determining the instructional level on an informal reading inventory. Until further evidence is available, the omission of repetitions as errors for oral reading accuracy with the JAT Reading Inventory is recommended.

There is no doubt that further research is needed to validate the oral accuracy level and scoring criteria used to determine the

instructional level. In the meantime, the data currently available should be used by test developers to increase the validity of informal reading inventories. It is also recommended that validation procedures be utilized for specific IRIs, both those commercially available and those developed by teachers.

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Table 1

Word Recognition Accuracy at

Each Level of An IRI

Passage Levels	N	Mean % Word Recognition Accuracy*
1	24	90
2	16	93
3	52	93
4	32	94
5	4	94
6	4	95
7	3	91
8	1	96

*Total mean 93.25%

Means (levels 2-4) 93.5%

Table 2

Percentage of Oral Reading Accuracy

With and Without Repetitions

Grade Level	N	With Repetitions	Without Repetitions	t
2	24	89.05	93.37	1.57
3	33	92.22	94.36	.75
4	37	94.13	96.11	1.19
5	42	93.30	95.94	1.08
TOTAL	136	92.51	95.15	1.79